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LETTER OF DEFICIENCY
No. WMD 03-11

Teradyne Circuits Operation
91 Northeastern Boulevard
Nashua, New Hampshire 03062

Attn: Mr. Rick Schneider, President

Re: Teradyne Circuits Operation
Nashua, New Hampshire
EPA ID # NHD073974651

Dear Mr. Schneider

On February 20 and 21, 2003, the Department of Environmental Services, Waste Management Division (DES) conducted an inspection of Teradyne Circuits Operation (Teradyne). The purpose of the inspection was to determine Teradyne's compliance status relative to RSA Ch. 147-A and the New Hampshire Hazardous Waste Rules, Env-Wm 100-1100

As a result of the inspection, the following deficiencies in your hazardous waste management program were documented:

Limited Permit # DES-HW-LP-97-020 – Inspections of Wastewater Treatment Unit

At the time of the inspection, Teradyne was operating a wastewater treatment unit (WWTU) permitted by DES under Limited Permit # DES-HW-LP-97-020. A review of Teradyne's WWTU Inspection Log revealed: 1) the time of inspection; and 2) the date and nature of repairs or remedial actions taken, were not documented.

Limited Permit # DES-HW-LP-97-020 requires that Teradyne inspect its WWTU for malfunctions, deterioration, operator errors, and discharges which may be causing, or may lead to, unauthorized release of hazardous waste to the environment or a threat to human health. Inspections must be recorded and documented in a log which includes the date and time of the inspection, the name of the inspector, a recording of the observations made, and the date and nature of the repairs or other remedial actions taken.

DES requested that Teradyne amend the existing WWTU Inspection Log to reflect the time of inspection, and the date and nature of any necessary repairs or remedial actions taken, and submit an updated log to DES.

In a February 27, 2003 submittal, Ms. Joan Girard, Environmental & Safety Manager, provided documentation substantiating that the WWTU Inspection Log has been amended to include the time of inspection, and the date and nature of any necessary repairs or remedial actions taken. No further action is required.

2. Env-Wm 509.02(a)(1) – General Inspection Requirements

A review of Teradyne's Hazardous Waste Inspection Log revealed: 1) the time of inspection; and 2) the date and nature of repairs or remedial actions taken, were not documented.

Env-Wm 509.02(a)(1), which references 40 CFR 265.15, requires full quantity generators to conduct and document inspections of the facility, including hazardous waste storage areas. The inspections are required to be recorded in a log which includes the area being inspected, the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of the repairs or other remedial actions taken.

DES requested that Teradyne amend the existing Hazardous Waste Inspection Log to reflect the time of inspection, and the date and nature of any necessary repairs or remedial actions taken, and submit an updated Hazardous Waste Inspection Log to DES.

In the February 27, 2003 submittal, Ms. Girard provided documentation substantiating that the facility's Hazardous Waste Inspection Log has been amended to include the time of inspection, and the date and nature of any necessary repairs or remedial actions taken. No further action is required.

3. Env-Wm 509.02(a)(2) – Personnel Training

A review of Teradyne's personnel training program revealed the following deficiencies

- (a) Senior Environmental & Safety Engineer/alternate emergency coordinator Mark Cappi did not receive hazardous waste management training in the year 2001; alternate emergency coordinator Robert Canedo did not receive hazardous waste management training in the years 1998 through 2001; and alternate emergency coordinator Emile LaPlante did not receive hazardous waste management training in the year 1999.
- (b) Wastewater Treatment Operators Glen Charette, Dave Bogle, and Donald Schmitt did not receive hazardous waste management training in the year 1998; Wastewater Treatment Operators Mike Werbecki and Robert Hoyt did not receive hazardous waste management training in the year 2001; and Wastewater Treatment Operator James Bergeron did not receive hazardous waste management training in the years 1998, 2000, and 2001.

Env-Wm 509.02(a)(2), which references 40 CFR 265.16, Personnel Training, requires full quantity generators to maintain a personnel training program. This includes, but is not limited to, ensuring that initial training and annual reviews are conducted for personnel handling hazardous waste.

DES requests that Teradyne continue to conduct and document hazardous waste training and annual reviews for all Emergency Coordinators and employees who handle hazardous waste and/or sign hazardous waste manifests (refer to the enclosed FQG Module). No further documentation is required to achieve compliance at this time. All personnel required to be trained in hazardous waste management have received training within the last year.

4. Env-Wm 509.02(a)(5) – Contingency Plan

A review of Teradyne's contingency plan revealed deficiencies regarding the following:

- (a) Emergency coordinators' home and office addresses;
- (b) Physical description of emergency equipment; and
- (c) Brief outline of the capabilities of emergency equipment.

Env-Wm 509.02(a)(5), which references 40 CFR 265, Subpart D, requires full quantity generators to maintain a complete contingency plan at the site.

DES requests that Teradyne revise its contingency plan to correct any deficiencies as identified in the enclosed Hazardous Waste Generator Inspection Report.

In the February 27, 2003 submittal, Ms. Girard provided documentation substantiating that the facility's contingency plan has been amended to include a physical description of emergency equipment and a brief outline of the capabilities of emergency equipment. In an email dated February 28, 2003, Ms. Girard informed DES that Teradyne's corporate office interprets the regulation in 40 CFR 265.52(d) as stating that the "home and office" pertains only to the telephone numbers of the emergency coordinator's, and does not pertain to their addresses. However, DES, and the U.S. Environmental Protection Agency (EPA), interprets the regulation to require that contingency plans list the home and office phone numbers, and home and office addresses for each emergency coordinator. DES and EPA have consistently enforced this regulation according to this interpretation. Therefore, DES requests Teradyne to revise its contingency plan to include the emergency coordinators' home addresses.

5. Env-Wm 509.02(b) – Emergency Posting

At the time of the inspection, there were no emergency postings at the nearest telephone to the Main Hazardous Waste Storage Area and the F006 Storage Area.

Env-Wm 509.02(b) states that full quantity generators shall post a list of the steps to take if an emergency occurs and the following emergency numbers at the nearest telephone to the hazardous waste storage area:

- (a) The emergency coordinators (home and office);
- (b) The fire department, police department, and State of New Hampshire and local emergency response teams that may be called upon to provide emergency services, unless the facility has a 24-hour response team designated to provide emergency services whose number is posted; and
- (c) The location of fire extinguishers and spill control material, and, if present, fire and internal emergency alarms.

DES requested that Teradyne post the required information at the nearest telephone to the Main Hazardous Waste Storage Area and the F006 Storage Area.

In the February 27, 2003 submittal, Ms. Girard provided documentation substantiating that Teradyne has posted the required information in the two hazardous waste storage areas. No further action is required.

6. Env-Wm 509.03(d) – Satellite Storage

At the time of the inspection, one (1) 55-gallon container of “hazardous waste acid filters” observed in the Cleaning Room, and one (1) 55-gallon container of hazardous waste “IPA-contaminated rags” observed in the QC Area were not sealed because the snap rings around the lids were not closed (see satellite container inventory).

The inspection also revealed that Teradyne generates a waste liquid from puncturing aerosol cans of Tuf-Lube 3C. Tuf-Lube 3C is a chemical product used by Teradyne to clean plates during the manufacturing of printed circuit boards. Teradyne submitted an MSDS for the product and supplied the name of the propellant to DES. A review of this information indicated that the Tuf-Lube 3C is not a flammable liquid, however, the propellants, 1,1-difluoroethane and dimethyl ether, are flammable.

Teradyne uses the Aerosolv® Aerosol Can Recycling System to puncture the cans and capture the remaining contents and propellant. According to facility representatives, the liquid waste has never been shipped off-site for disposal yet, and it has not yet been determined if the waste is a hazardous waste. Teradyne is currently managing the waste as a hazardous waste until a formal determination is made. DES personnel observed and

photographed the Aerosolv[®] system, located in the Main Hazardous Waste Storage Area, which includes the puncturing unit, a 30-gallon container to collect the liquid waste, and a carbon filter to capture volatile organic compounds. At the time of inspection, the container was labeled as a hazardous waste satellite storage container for "waste combustible liquid". The 30-gallon container was not sealed because the carbon filter was not removed and replaced with the bung when the system was not in use.

Env-Wm 509.03(d), which references Env-Wm 507.01(a)(3), requires generators to ensure that containers storing hazardous waste be closed at all times, except when waste is being added to or removed from the containers.

DES requests that Teradyne ensure that containers storing hazardous waste remain closed at all times, except when adding waste to or removing waste from the containers. Specifically, snap rings should be closed, and the carbon filter on the Aerosolv[®] system should be removed and replaced with the bung when the system is not in use.

During the inspection, Teradyne personnel closed the snap rings around the lids of the two (2) 55-gallon containers. DES requests documentation confirming that the bung is replaced on the Aerosolv[®] system when it is not in use.

7 Env-Wm 510.03(i)(5) Manifest Information

A review of Teradyne's hazardous waste records indicated that manifests documenting shipments of hazardous waste "Hot Oil Reflow" did not include all applicable EPA or state waste numbers. The deficiency was substantiated by analytical results for the "Hot Oil Reflow", provided to DES personnel during the inspection, which indicated the characteristic of corrosivity and the presence of lead above regulatory thresholds. Teradyne's manifests did not list the D002 waste code.

Env-Wm 510.03 requires that manifests contain all of the information required in the Appendix to 40 CFR 262, and Env-Wm 510.03(i)(5) requires that other applicable EPA or New Hampshire waste numbers be listed in manifest item J.

DES requested that Teradyne list the D002 waste code on all future shipments of the hazardous waste "Hot Oil Reflow".

In the February 27, 2003 submittal, Ms. Girard provided documentation substantiating that the D002 waste code will be listed on all future manifests for shipments of the "Hot Oil Reflow". No further action is required.

8 Env-Wm 807.06(b)(4) - Standards for Generators of Used Oil Being Recycled

At the time of the inspection, Teradyne was storing one (1) 55-gallon container of used compressor oil in the "Geka Haus", and one (1) 55-gallon container of used oil/water in the "Boiler Room" which were not labeled with the words "Used Oil for Recycle."

Env-Wm 807.06(b)(4) requires that generators of used oil destined for recycling label their containers and tanks with the words "Used Oil for Recycle" at all times during accumulation and storage.

DES requests that Teradyne label the containers of used oil identified above that are destined for recycle with the words "Used Oil for Recycle" at all times during accumulation and storage.

Env-Wm 807.06(b)(5) Standards for Generators of Used Oil Being Recycled

At the time of the inspection, Teradyne was storing one (1) 55-gallon container of used oil/water in the "Boiler Room" which was not closed.

Env-Wm 807.06(b)(5) requires that used oil be placed in containers or tanks that remain closed at all times, except to add or remove wastes.

DES requests that all containers and tanks be kept closed at all times except to add or remove used oil. Safety funnels that thread into the bung and have closeable lids that seal are acceptable for this purpose.

During the inspection, Teradyne personnel closed the funnel on the container of used oil. No further action is required.

The February 20 and 21, 2003 inspection revealed that Teradyne generates hazardous waste F006 sludge from the wastewater treatment unit's filter press. According to facility representatives, the sludge drops from the filter press into a 1-cubic yard hopper, where it remains until it is brought to, and dumped into, a roll-off container in the F006 Storage Area. DES personnel observed and photographed the hopper located in the Wastewater Treatment Room. At the time of inspection, the hopper was empty, however, it was labeled as a satellite storage container for "F006 sludge". Satellite storage containers are subject to regulation under Env-Wm 509.03 of the Hazardous Waste Rules. Env-Wm 509.03(c) states that satellite storage areas must meet the storage requirements of Env-Wm 507.01, which requires that hazardous waste containers remain closed at all times except to add or remove waste. However, the hopper has no means of being closed. Therefore, DES recommended that Teradyne amend the current F006 sludge storage practices to establish full compliance. In the February 27, 2003 submittal, Ms. Girard stated that the hopper will no longer be used for satellite storage; the labels have been removed from hopper; and the hopper will be used to transport the F006 sludge to the roll-off *immediately* after filling. Please be advised that if the sludge is stored in the container for any period of time, the container must meet all the storage requirements of Env-Wm 509.03.

During the inspection, DES personnel observed and photographed a 5-gallon bucket located under the Ammonia Etch bath in the Plate Room. According to facility personnel, the bucket was placed under the bath to collect leaking Ammonia Etch. The collected Etch is subsequently poured back into the bath when the bucket is full. Because the Etch in the bucket is

reused and not deemed a waste, the bucket is not required to meet hazardous waste storage container requirements. However, DES recommends that Teradyne investigate and repair the cause of the leak in order to avoid any releases of the Etch from the bucket.

DES believes the cited deficiencies can be corrected and a report describing the corrective measures taken by Teradyne can be submitted within thirty (30) days of receipt of this letter. Supporting documentation that describes the measures taken to achieve compliance should be included with the report.

In the event compliance is not achieved within this period, DES may take further action against Teradyne including issuing an order requiring that deficiencies be corrected, initiating an administrative fine proceeding, and/or referring the matter to the New Hampshire Department of Justice for imposition of civil penalties. In addition, DES personnel may reinspect your facility at a later date to determine whether the facility has come into, and is maintaining, full compliance with the applicable rules. Fines may be pursued for any or all violations observed during subsequent inspections of the facility.

The written report as requested above should be addressed as follows:

Kenneth W. Marschner, Administrator
DES/WMD
6 Hazen Drive
Concord, New Hampshire 03301-6509

Enclosed you will find a copy of the completed Hazardous Waste Generator Inspection Report which documents the compliance status of your facility at the time of the inspection. This checklist may also be of value to you for use in determining future compliance with the New Hampshire Hazardous Waste Rules.

The State of New Hampshire Hazardous Waste Rules, as well as much other useful information, can be obtained from DES's website at <http://www.des.state.nh.us/hwcs/>, or by contacting the Public Information Center at (603) 271-2975.

It is the goal of DES to promote the prevention of pollution at the source as the preferred option for meeting established environmental quality goals. We strive to ensure that pollution prevention options are considered first, followed by recycling, treatment and disposal. I am requesting that the DES's Pollution Prevention Coordinator, Stephanie D'Agostino, contact you to discuss possibilities for waste minimization or source reduction at your facility. In the meantime, if you have immediate questions about pollution prevention, please feel free to contact her at 271-6398.

As a service to New Hampshire's hazardous waste generators, we maintain a Hazardous Waste Assistance Hotline which is available for you to contact our knowledgeable staff of hazardous waste inspectors. Our hazardous waste staff is available to answer your questions concerning the New Hampshire Hazardous Waste Rules and the compliance issues which affect

your hazardous waste management program. The technical assistance available through the Hotline includes fact sheets that pertain to the management and recycling of specific wastes, summary sheets of specific sections of the Hazardous Waste Rules, copies of EPA and New Hampshire hazardous waste policy or regulatory interpretation letters that may benefit your operation, and networks with other state or federal agencies to answer your questions on a national level. The Hotline is available Monday through Friday, 8:00 AM to 4:00 PM at 271-2942.

Should you have any questions regarding this letter, please contact the lead inspector, Jessica Cajigas or John J. Duclos, Supervisor of the Hazardous Waste Compliance Section at 271-2942. Specific questions regarding water related issues may be directed to Sharon Ducharme of DES's Water Division at 271-3307, and for air related issues, please contact Pam Monroe of DES's Air Resources Division at 271-1370. Thank you for your cooperation.

Sincerely,



Kenneth W. Marschner, Administrator
Waste Management Programs
Waste Management Division

cc: DB/RCRA/LOD/Archives
Philip J. O'Brien, Ph.D., P.G., Director, WMD
Gretchen Rule, Esq., Administrator, DES Legal Unit
Joan Girard, Environmental and Safety Manager, Teradyne Circuits Operation

E-mail: JJD/SD/SD/PM

Enclosure: Hazardous Waste Generator Inspection Report